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ABSTRACT

This field log for grouping animals is developed around a field experience at the zoo. The field guide is organized in three sections. Section one, for use before the field trip, develops the basic concept of classification. Section two, for use at the zoo, guides the students to make direct observations to classify the animals. Section three, for use after the field trip, leads the student to other aspects of classification. The log is designed for use by elementary school students. This work was prepared under an ESEA Title III contract. (BP)

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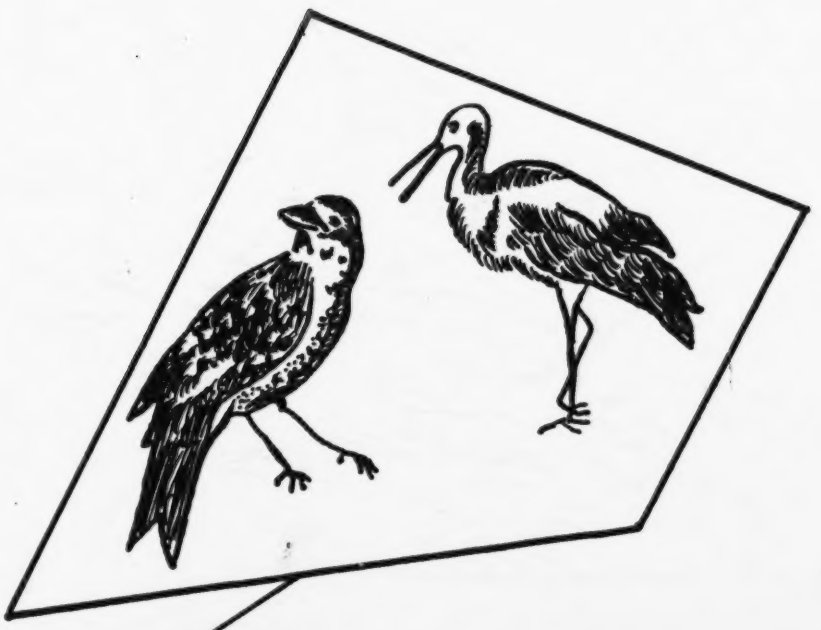

GROUPING ANIMALS

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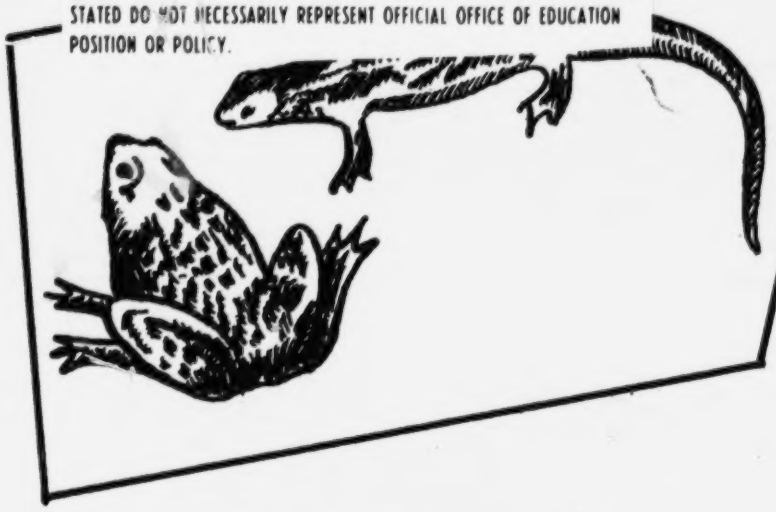

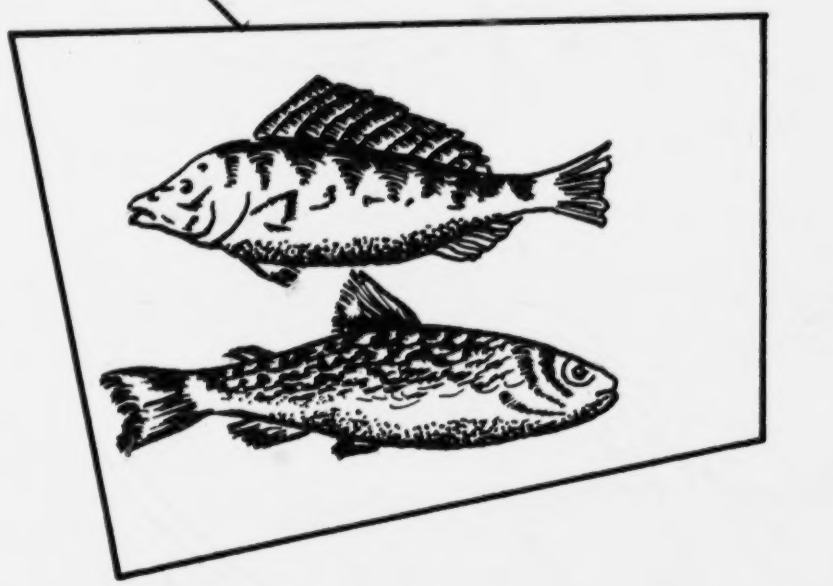

STUDENT'S FIELD LOG

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STUDENT'S FIELD LOG
for
GROUPING ANIMALS

ROBERT L. DWYER

ILLUSTRATED BY:

ROBERT L. DWYER and LOIS EBERT

WORKING PAPER
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OUTDOOR NATURAL SCIENCE LABORATORY
SCHOOL DISTRICT OF UNIVERSITY CITY
UNIVERSITY CITY, MISSOURI 63130

PREFACE

Student's Field Log for Grouping Animals is being developed as a part of the program of the Outdoor Natural Science Laboratory funded by Title III, ESEA and administered by the School District of University City.

The Outdoor Natural Science Laboratory is an innovative and exemplary program which is attempting to take students beyond the restrictions of their classroom and to make use of community resources for the teaching of science and correlated activities. The total thrust of the Outdoor Natural Science Laboratory program (of which this is only one part) is directed toward the development of a better understanding and appreciation of man's role in his natural and cultural environment and is strongly committed to maximum student involvement in the activities which are being designed.

Other phases of the program revolve around the St. Louis County Water Company and Metropolitan Sewer District, the Missouri Botanical Garden, and the richly varied natural resources of eastern Missouri. Much of the Outdoor Natural Science Laboratory program evolves from the continual development of a twenty-nine acre natural site within the bounds of the school district--an island in an otherwise thoroughly developed suburban-metropolitan area. The staff of the Outdoor Natural Science Laboratory lends support to the classroom-oriented science curriculum of the school district and is involved in the up-dating of a long established school camping program for sixth graders.

Additional information about the Grouping Animals activity or the program of the Outdoor Natural Science Laboratory may be obtained by writing:

School District of University City
Outdoor Natural Science Laboratory
711 Kingsland Avenue
University City, Missouri 63130

or by calling:

314-727-1070 (Outdoor Science)

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Mr. Henry Kaltenthaler my co-naturalist has worked with me from the beginning in developing the activities, trial testing them, and offering his constructive criticism for their revision.

To these and to all the fourth grade teachers and students of the School District of University City who experimented with the Grouping Animals program in its first year of trial teaching, I give my utmost thanks.

Robert L. Dwyer

TABLE OF CONTENTS

PREFACE i
ACKNOWLEDGEMENTS. ii

BEFORE THE FIELD TRIP 2

How may things be grouped? 3
How are animals grouped? 7
How are vertebrates different? 10
How are animals divided into still smaller groups? 13
How must animals be cared for? 15
How to get ready for the field trip. 19

AT THE ZOO. 21

How are the beaks and feet of birds different? 22
How can animals be identified by their characteristics? 25
How are characteristics used to group birds? 28
How are reptiles divided into smaller groups? 30

AFTER THE FIELD TRIP. 33

How would you arrange a zoo? 34
What next? 38

INTRODUCTION

Your class has decided to go to the zoo. You have probably been to the zoo before. It is fun to go to the zoo with your family in the summer because there are so many things to see and do. There are the animal shows to see and the zoo train to ride. You can spend many days seeing all of the animals that are on display. The lions, tigers, and other big cats are exciting, the gazelles and other antelopes are graceful to watch, the monkeys are fun as they leap and climb and swing around their cages. Perhaps after a long day at the zoo you even stayed in the park for a picnic dinner.

When your class goes to the zoo it is going to be fun too, but the trip is also going to be part of your science. The zoo is a very good place to study animals. You could learn where the animals come from, what they eat, how they protect themselves, how they move about, or many other things. On this trip you will be asked to look at the animals more closely than you have ever looked at them before. You may discover some things you have never noticed about some of the animals. After you have been to the zoo and done some of the activities in this booklet we hope you will also know a little more about how animals are grouped.

You will notice that the pages in this booklet are three colors. It will be important for you to read and do all the activities on the white pages <u>before</u> you go to the zoo. You will do some of the activities on the green paper while you are <u>at</u> the zoo. The yellow pages can be looked at when you <u>return</u>.

BEFORE THE FIELD TRIP

Before you go to the zoo there will be several things that you will need to know. A naturalist will visit your classroom about two weeks before your trip to help you understand what you will be doing at the zoo.

How may things be grouped?

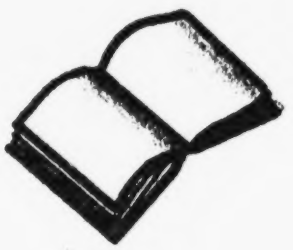
How many things are in your desk? How many different kinds of things are in your classroom? Could you go to a grocery store and make a list of each kind of thing on the shelves? Try to imagine how difficult it would be to make a list of everything that exists in a world.

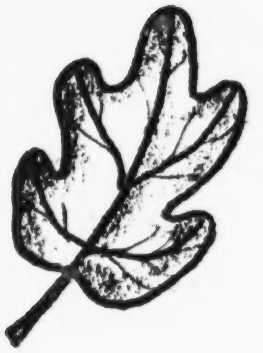
Since it is impossible to talk about each thing in the world individually, there must be a system for talking about groups of objects. Man has been faced with this problem from the beginning of time. Even the earliest cave man had to think of all the things that were good to eat and the things that were poisonous, the animals that were dangerous and those that would do him no harm. Since the caveman, man has grouped things in many ways and for many different purposes. The dictionary groups words alphabetically, the telephone directory classifies phone numbers according to the names of the peoples who own them. A department store arranges thousands of items according to their use. Where would you look for a model car, a baseball glove, a frying pan, a dress, or a towel? It would not be hard to find these things because they are grouped with similar items in different parts of the store.

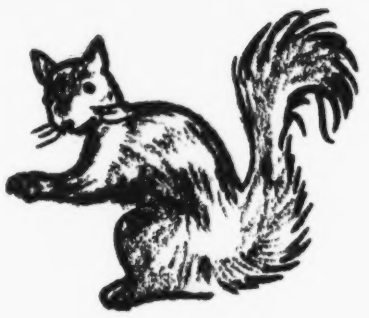
There is no <u>one</u> way to group things. Any arrangement can be correct as long as there is a reason for the method that is used. Here are pictures of a wide variety of different things. Can you figure out a way to divide them into two groups so that all of the things in one group are similar to each other and different from the things in the second group? Draw a circle around all of the objects that you put in one group.

Draw a square around all of the objects that you put in the other group. (You do not have to put an even number of objects in each group.)

If you were going to make a classification system for a collection of things that belonged to you, it might not be important for anyone else to understand your system. If your system works, however, anyone should be able to group the same objects in the same way if they use your system. Mark the two groups on the following page. Now without showing your paper to your neighbor, tell him how the items in each group are similar and then ask him to divide his pictures into two groups using your system. If you have a good system, both you and your friend will have the same items in the same groups.

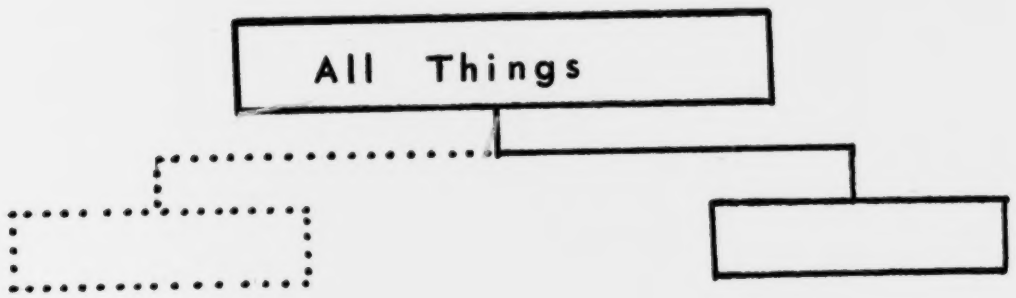






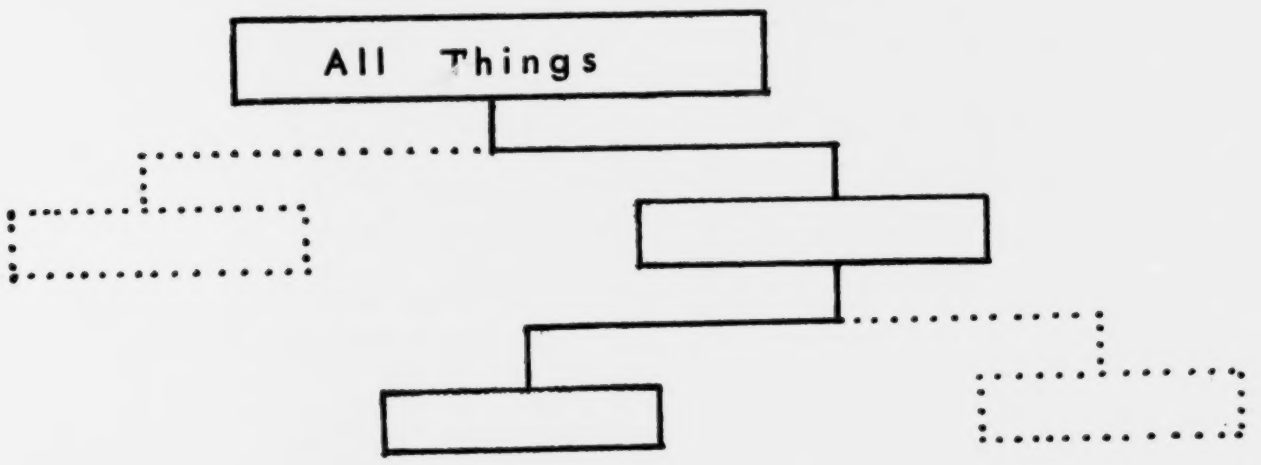
Even though any system may be used to group objects, it is often necessary for several people to work together. This would not be possible if each person used a different grouping system. Everyone must agree to use the same system. You will work out the beginning of a system for classification when you prepare for your class field trip.

Perhaps you or someone in your class separated the drawings on the last page into the two groups; living and non-living. While this is not the only way to group the pictures, it is a convenient method that we will use in this booklet. As you work through the next few pages you can develop a chart of your grouping system.



We will leave the sub-group "non-living" for you to discuss later. The group of living things is still much too large to work with so it can be divided once more.

Can you divide all living things into two groups so that no living thing is left out? This may not seem like a very difficult problem, so let us add to our chart.



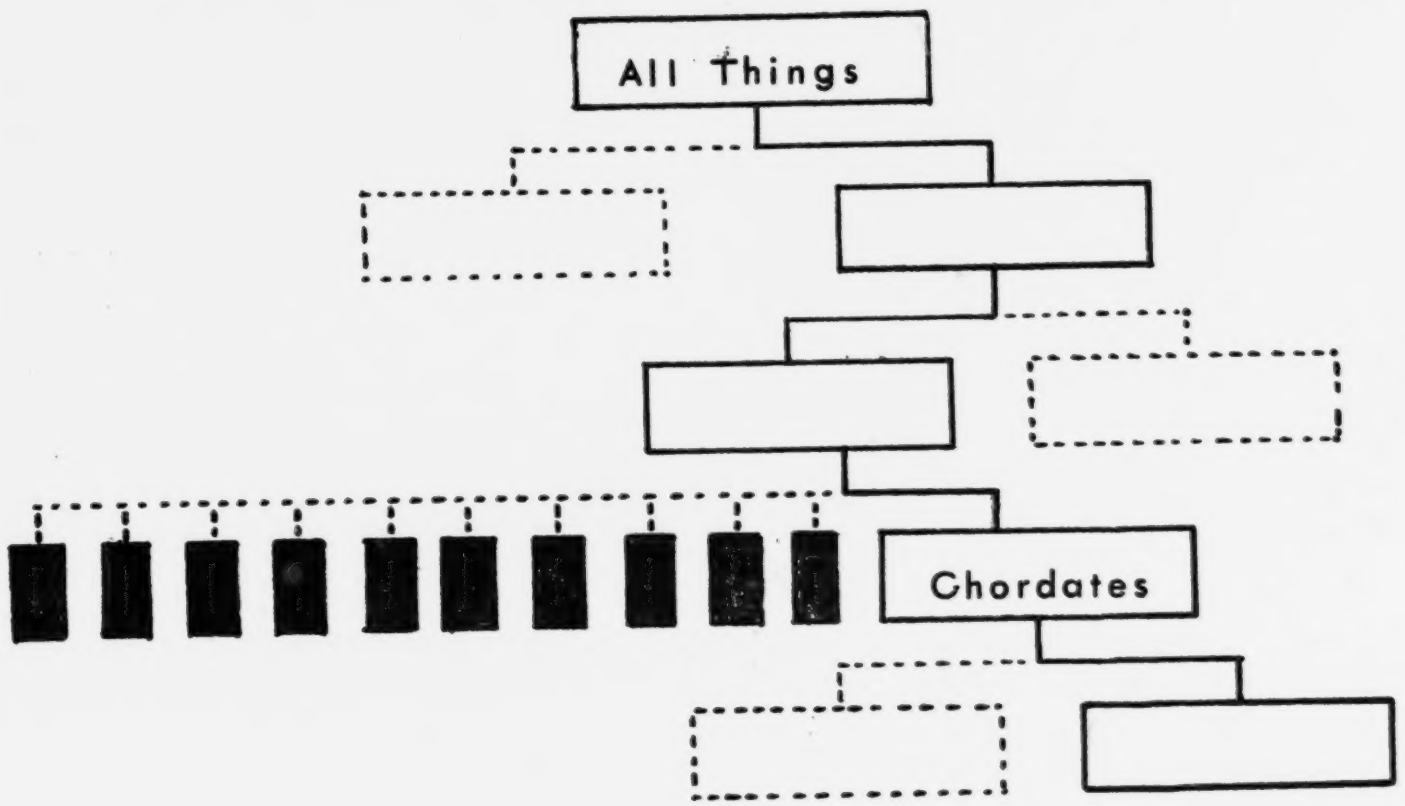
Scientists were able to use this system for many years. Lately, however, better tools like the electronic microscope have helped them to study bacteria and viruses in more detail. They have discovered that these living things do not fit into either group. Their answer was to make a third group called Protista. Since Protists are all microscopic and you will not be seeing them we will not discuss them further. Also, since we are going to the zoo and the word "zoo" is a Greek word meaning animals, we will also not discuss the Plant Kingdom further.

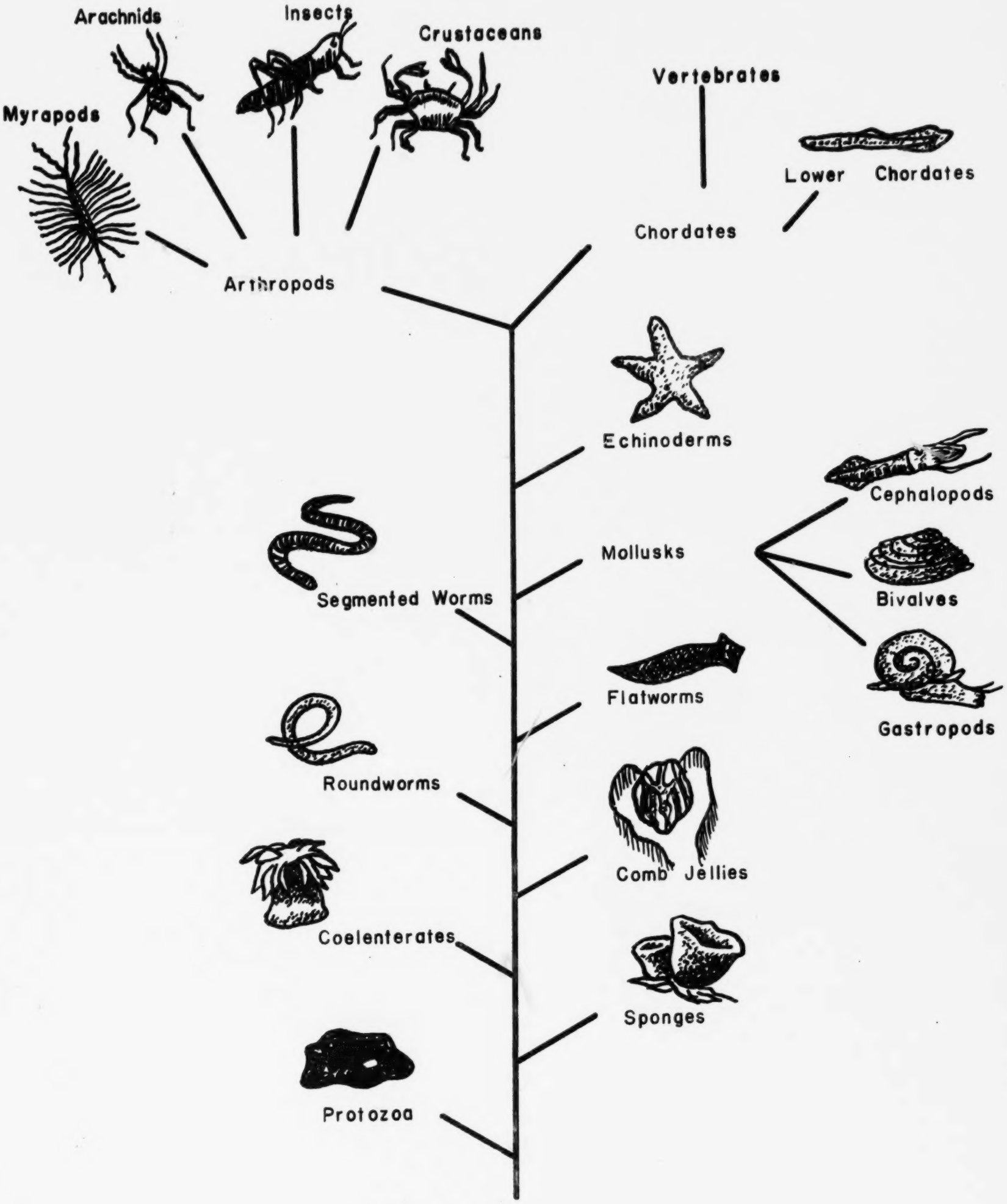
How are animals grouped ?

By grouping, everything non-living and all of the plants have been eliminated. This only leaves a large group which we have called the Animal Kingdom. However, there are over a million different kinds of animals in the world. This is still an impossible number of things to deal with. The solution, of course, is to make still smaller groups.

On the next page is a diagram showing several of the groups that are usually formed. In the standard system of classification these groups are referred to as phyla. Some systems of classification have over twenty phyla. This chart shows only eleven groups. Many of these groups are rare or are found mostly in the ocean. There is only a part of one of these groups of animals found in the zoo; the Chordates. The Chordates all have a nerve chord which runs along their back. In addition to the nerve chord, some chordates have a backbone which protects the chord. This is the group of animals that are found in the zoo--the vertebrates.

The backbone is not a single bone, but is made up of several bones strung together like beads on a string. Each small bone is called a vertebra. Therefore, animals that have backbones are called vertebrates.

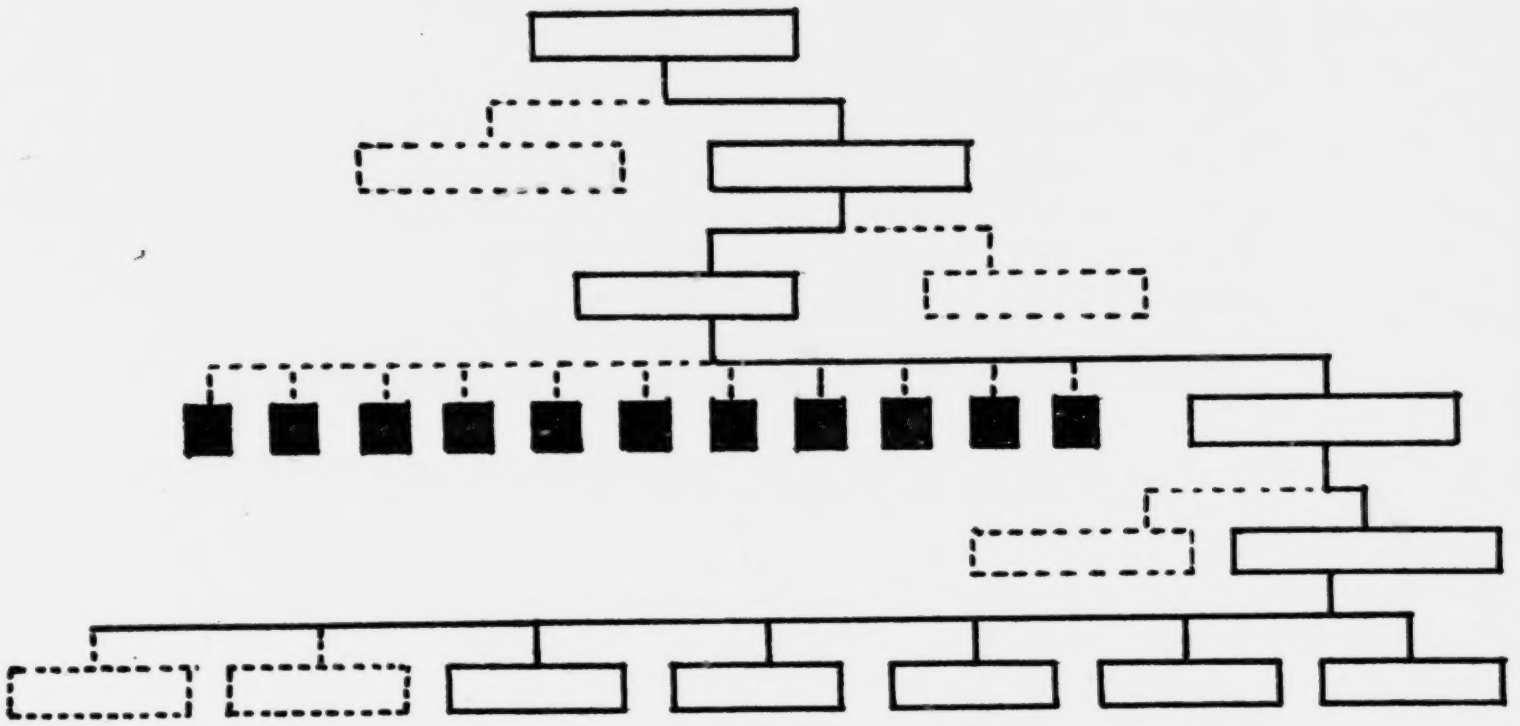




ANIMAL KINGDOM

How are vertebrates different ?

Vertebrates are also divided into several smaller groups. You are probably already familiar with these groups so you can go ahead and complete the next level of classification in your chart. These groups are referred to as classes.



You have several different animals in your classroom which represent each of the five classes of vertebrates. Look at them closely for several days and see if you can decide how they are alike or how they are different. The differences in their characteristics are what makes the classification of mammals, birds, reptiles, amphibians, and fish. As you discover what you think are important characteristics for classification, record them in the spaces on the next page.

MAMMALS

BIRDS

REPTILES

AMPHIBIANS

FISH

How are animals divided into still smaller groups?

As you studied the animals in your classroom you probably noticed that the representatives of each class had certain differences as well as similarities. These differences are used to separate each class into smaller and smaller groups until only a single kind of animal is left in each group. Classes are divided into orders, orders into families, families into genera, and finally genera are divided into species.

At the zoo you will be trying to put animals into groups smaller than classes. You might practice doing this by comparing the different types of mammals, birds, reptiles, amphibians, and fish that you have in your classroom.

In addition to the characteristics identified as being those of mammals, how else are the mammals in the classroom alike? How are they different?

_____

_____

_____

_____

_____

_____

In addition to the characteristics identified as being those of birds, how else are the birds in the classroom alike? How are they different?

_____

_____

_____

_____

_____

_____

In addition to the characteristics identified as being those of reptiles, how else are the reptiles in the classroom alike? How are they different?

In addition to the characteristics identified as being those of amphibians, how else are the amphibians in the classroom alike? How are they different?

In addition to the characteristics identified as being those of fish, how else are the fish in the classroom alike? How are they different?

How must animals be cared for?

The animals that are being left in your classroom are being left on one condition. You must share the responsibility for these animals with your classmates. This means that you and your class, not your teacher must feed, clean up after, and otherwise take care of the animals.

NOT DANGEROUS

None of the animals can be considered dangerous to you. The most dangerous animal in your classroom is YOU! You are larger, stronger, and have complete control over the lives of the animals in your classroom. If the animals are squeezed too tight, you are the one who injures the animal; if the animal is dropped, you are the one who drops it; if the animal is teased and becomes mean, you are the one who does the teasing or allows others to do the teasing.

HANDLING ANIMALS

Some people seem to be able to make friends with animals very quickly. Other people scare animals; they cannot get close to the animal or the animal bites or scratches them trying to defend itself. When you work with animals you must know something about their instincts or habits left over from when their ancestors were living wild. Animals in the wild must always be alert for they are surrounded by dangers and can become a meal for another animal at any time. Sudden or loud noises or fast movements cause the animal to act immediately. This action may be to run away or to fight. If the animal is in a cage, on a desk, or in your hands and tries to run away it can easily be injured by falling or running into a wall. If the animal attempts to defend itself, you may be bitten or scratched. Probably you will not be injured badly but just enough to hurt and be uncomfortable. Animals are also afraid of falling, just as you might be. Imagine yourself being picked up by your middle and lifted as high as the ceiling of the room with your arms and legs waving in the air. This is probably what the animals feel like when they are not handled properly. Get your hands under the animal and allow the animal to hold on with his own feet.

Three basic rules then, are:

1. MOVE SLOWLY! GIVE THE ANIMAL A CHANCE TO SEE WHAT YOU ARE DOING. DON'T HAVE SEVERAL PEOPLE ALL TRYING TO PLAY WITH THE ANIMAL AT THE SAME TIME.
2. BE QUIET! AVOID LOUD TALKING, SUDDEN NOISES, OR LOUD CONFUSION CAUSED BY SEVERAL PEOPLE ALL TALKING AT THE SAME TIME.
3. PROVIDE SUPPORT! PICK UP THE ANIMAL GENTLY BY PLACING THE HANDS UNDER THE BODY AND THE FEET. BE ALERT FOR SUDDEN MOVES BY THE ANIMAL THAT MIGHT CAUSE YOU TO DROP HIM.

RESPECTING THE FEELINGS OF OTHER STUDENTS

YOU WILL NOT HAVE TO TOUCH ANY ANIMAL! You may feel that you do not want to touch some of the animals because they are strange and you are just a little bit afraid of them. This is perfectly all right. Perhaps as you watch other students in the class work with the animals you will begin to lose your fear and want to touch them. This is what we hope will happen, but remember--no one is going to make you do anything.

If you are not afraid of any animals and like to handle them already, fine. However, you have a responsibility to your classmates who do not feel the same way. Many adults are afraid of animals or certain kinds of animals today because they were frightened by animals when they were children. It might be funny to you to sneak up behind someone with the iguana and suddenly push it in their face but it is not funny to the person being frightened! This is a poor joke and you should not want to be responsible for making someone hate animals for the rest of their lives.

KNOWING THE NEEDS OF ANIMALS

It is fun to have a pet. When the animal is well cared for and healthy it can bring you many hours of enjoyment. If the animal is kept without a proper cage, poorly fed, uncleaned, and teased it will become a mean, smelly animal that gives you nothing but problems, until finally you have to get rid of it or let it die.

Before you get a pet, learn as much about it as you can. Complete the chart on the following page on at least one of the animals in the classroom that you are helping to care for. If you are thinking about getting a pet, you might want to make a similar chart for whatever animal you are interested in.

Name of the Animal_____

What is the best age to get this animal?_____

What does this animal eat?_____

_____

_____

_____

How often does this animal need to be fed?_____

_____

How much cage room does this animal need?_____

_____

What kind of cage does this animal need?_____

_____

How often does the animal cage need cleaning?_____

_____

Are there any special problems to cleaning the cage?_____

_____

Can the animal be allowed to move about the room without creating clean up problems?_____

_____

Can the animal be taught to be gentle and playful?_____

_____

_____

Will the animal stay playful as it grows older?_____

_____

How large will the full-grown animal be?_____

_____

How long will the animal probably live if properly cared for?_____

_____

_____

Are these animals raised for pets or are they collected from the wild?

_____

_____

_____

If they are collected from the wild, is there any danger of this species becoming rare or extinct?_____

_____

_____

How to get ready for the field trip.

Now you are ready to take your field trip to the zoo so that you can work on something a little more difficult. Remember this trip is not a holiday, but a regular part of your science class. Field trips are fun, but they also have a purpose. Your purpose is to examine a variety of animals that are not available to you in your classroom.

For this field trip you will need to dress warmly. A hat or a coat with a hood and gloves are a must if the weather is cold since you will be spending some time outside. Boots are advisable for rain or snow and of course a raincoat if there is a light drizzle. A hard rain will probably postpone the trip. Wear comfortable shoes because you will be walking or standing for the whole trip.

The activities on this trip will require this field log and a pencil eraser. You will be provided with a clip board so that you have something to write on.

You will not need money because there will not be time to stop at the refreshment stands or machines. It is suggested that the girls do not bring purses since they will only get in your way.

Your science lesson will begin as soon as you leave your school. The bus and the zoo will be temporary classrooms where you will work and think and discuss what you are doing. It will be necessary for you to give your full attention to the teacher on the bus. You will also have to be alert to what the group is doing at the zoo so that you are not left behind.

Finally, please remember that you are a visitor to the zoo and that you must practice your best manners. Since the zoo is a public place we must not disturb other people who are enjoying the animals. There may be other school children having classes and we must also be careful not to disturb them. It will be important to stay close to the teachers so that you can hear when they are talking or, when you are working alone and be aware of when your class is ready to leave a particular area so that it is not necessary for the teachers to call out.

The zoo is a home for animals. It might be wise to review the basic rules on page 15. There cannot be any loud noise, running, or other fast movements that would frighten or tease the animals.

AT THE ZOO

This section of your booklet contains several activities that can be worked on at the zoo. There are more activities than you will be able to complete in one visit. You may want to return to the zoo with your family or friends at a later time to complete these projects.

How are the beaks and feet of birds different?

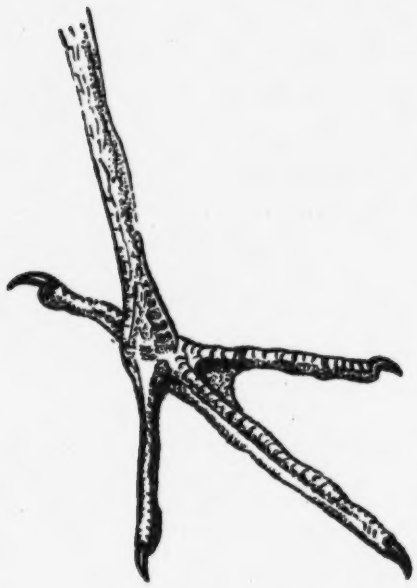
You have already discovered that all birds have several characteristics in common. For instance they all have feathers, they all have two wings (although all birds cannot fly), they all have a beak, and they all have two feet.

Ornithologists, who are peopl who study just this group of animals, have recognized over 9,000 different kinds of birds. These different species have been separated on the basis of structural characteristics. This means that although birds are similar in some ways, they are different in many other ways. Sometimes these differences are easy to see. Sometimes the differences are small and very difficult to find.

One easily observed way in which birds may be different is the structure of the beak or the feet. As you look at the birds at the zoo, you will find that there are many, many different shapes of beaks and many different kinds of feet. These differences are sometimes used to help divide the class of birds into many smaller groups or orders.

On the next two pages are drawings that show just a few of the kinds of beaks and feet you will see at the zoo. When you find a living bird that has a beak or feet like the kind that is illustrated, put a check beside the picture or write in the name of the bird.

RLD



How can animals be identified by their characteristics?

Structural characteristics are used to divide animals into smaller and smaller groups from the kingdom level all the way down to the species level. If the characteristics of a particular animal are described in enough detail it is easy to know to which groups the animal belongs including the species level. This activity will help you to see how this method works. It will also require that you study every animal closely and describe its characteristics to yourself.

Listed below are structural characteristics that are clues to the identities of certain "mystery" animals in the zoo. Tell what each animal is.

Each set of clues will lead you to only one animal. All of the clues must fit the animal if your answer is to be correct. If even one clue does not fit, your answer must be wrong. You must select one species of animal for your answer. For instance, "Rattlesnake" cannot be a complete answer because there are many different kinds of rattlesnakes. You would have to decide on one species such as "Pigmy Rattlesnake" to be correct.

The first clue is perhaps the most helpful in each set. This clue and perhaps the second will tell you whether you are looking for a mammal, bird, reptile, amphibian, or fish. Therefore, if you are in the bird house you need not waste any time looking for a mystery animal that begins "body covered with hair."

There are fifteen mystery animals. The number of animals that you will find will depend upon how much time you have, how fast you work, and how much of the zoo is covered.

1. _____
   a. body is covered by moist skin; no hair, feathers or scales present
   b. hind legs are larger than the front legs
   c. hind feet have webs
   d. skin is rough and covered with bumps

2. _____
   a. body covered with hair
   b. walks mostly on hind feet with erect posture
   c. has no tail
   d. has a thumb
   e. hair is black in color
   f. has large pink ears

3. _____
   a. body covered with feathers
   b. feet have webs
   c. bill adapted for getting food from the water
   d. long neck
   e. feathers are white in color
   f. black bill

4. _____
   a. body covered with scales
   b. no legs present
   c. tail ends in rattles
   d. has horn-like "plates" above eyes
   e. scales large and appear loose
   f. yellow-brown in color with sharply banded "raccoon" tail

5. _____
   a. body covered with hair
   b. hind legs slightly longer than front legs; front legs equal in length to about 1/2 of the height of the walking animal
   c. very short tail
   d. humped back
   e. ears nearly hairless, rounded, upright

6. _____
   a. body covered with feathers
   b. feet webbed
   c. wings developed as flippers
   d. black back; white front
   e. yellow feather tufts on head

7. _____
   a. body covered with scales
   b. fins
   c. body shape is wide oval
   d. color is silver with tints of pink
   e. habit of moving mouth in a "blowing" fashion

8. _____
   a. body covered with scales
   b. major part of body (trunk) covered by two piece shell
   c. shell flattened
   d. back feet webbed; front feet only slightly webbed with long toe nails
   e. upper shell rough and uneven

9. _____
   a. body covered with feathers
   b. four toes on each foot, two pointed forward, two backwards
   c. strong, narrow curved bill
   d. eyes located on a "face" so that both look forward
   e. two tufts of feathers standing up from head

10. _____
   a. body covered with moist skin; no hair, feathers or scales present
   b. four legs approximately equal in length
   c. no webs between toes
   d. eyes project only slightly from head
   e. head nearly circular when seen from above

11. _____
   a. body covered with few hairs
   b. walks erect
   c. has no tail
   d. has a thumb
   e. destructive to its habitat

12. _____
   a. body covered with scales
   b. four legs
   c. large spreading pads at tips of toes
   d. clings to smooth surfaces
   e. eyes especially large

13. _____
   a. body covered with hair
   b. tail short, difficult to see
   c. feet and legs developed as flippers
   d. whiskers around mouth to see
   e. ears very difficult to see
   f. end of face squared off

14. _____
   a. body covered with feathers
   b. long bare legs
   c. long neck
   d. webbed feet - three toes forward; small toe backward
   e. bill between 1 and 2 times as long as the head, massive, strongly curved downward
   f. colored part of the eye is yellow

15. _____
   a. body covered with hair
   b. four toes on front feet, three toes on back feet
   c. legs equal about 1/3 of height
   d. ears upright
   e. nose long and quite flexible
   f. back of neck forms crest with thin mane

How are characteristics used to group birds?

As you visit the bird house, you want to be aware of how birds are alike and how they are different. Complete the following exercises by making your own observations of the living specimens.

A. Use the clues to find a bird that is similar to the bird named at the beginning of the characteristics. Write the name of the bird you choose in the space provided below the characteristics.

Example: Black Banded Wood Owl

a. Both have four toes; two point forward and two point backwards; all are equipped with long, curved, sharp claws (talons).
b. Both have large eyes that are located on a "face" so that both look forward.
c. Both have upper bills that are narrow, hooked, and larger than the lower bill.

I think a similar species is a Bay Owl.

1. Macaw

a. Both have upper bills that are curved and extend beyond the lower bill.
b. Both have four toes; two point forward and two point backwards.
c. Both have a ring of skin without feathers around their eyes.

I think a similar species is a _____.

2. Kiskadee Flycatcher

a. Both have four toes; three point forward and one points backward.
b. Upper and lower bill are about the same length.
c. Legs are not especially long.

I think a similar species is a _____.

B. Below you will find the name of a bird. Identify three or more characteristics for this bird of the type that were given in part A. On the basis of the characteristics that you choose, identify a similar bird.

Curly Crested Arcari

Characteristics of this bird are:

a. _____

_____

_____

b. _____

_____

_____

c. _____

_____

_____

_____

I think a similar species is a _____.

C. Find a species of bird which is different from the birds identified in A and B. Give three or more characteristics for this bird. The characteristics should be of the same type as used in A and B. On the basis of these characteristics, identify a similar species.

A species which I feel is different from any which we have looked at is a _____. Characteristics of this bird are:

a. _____

_____

_____

b. _____

_____

_____

c. _____

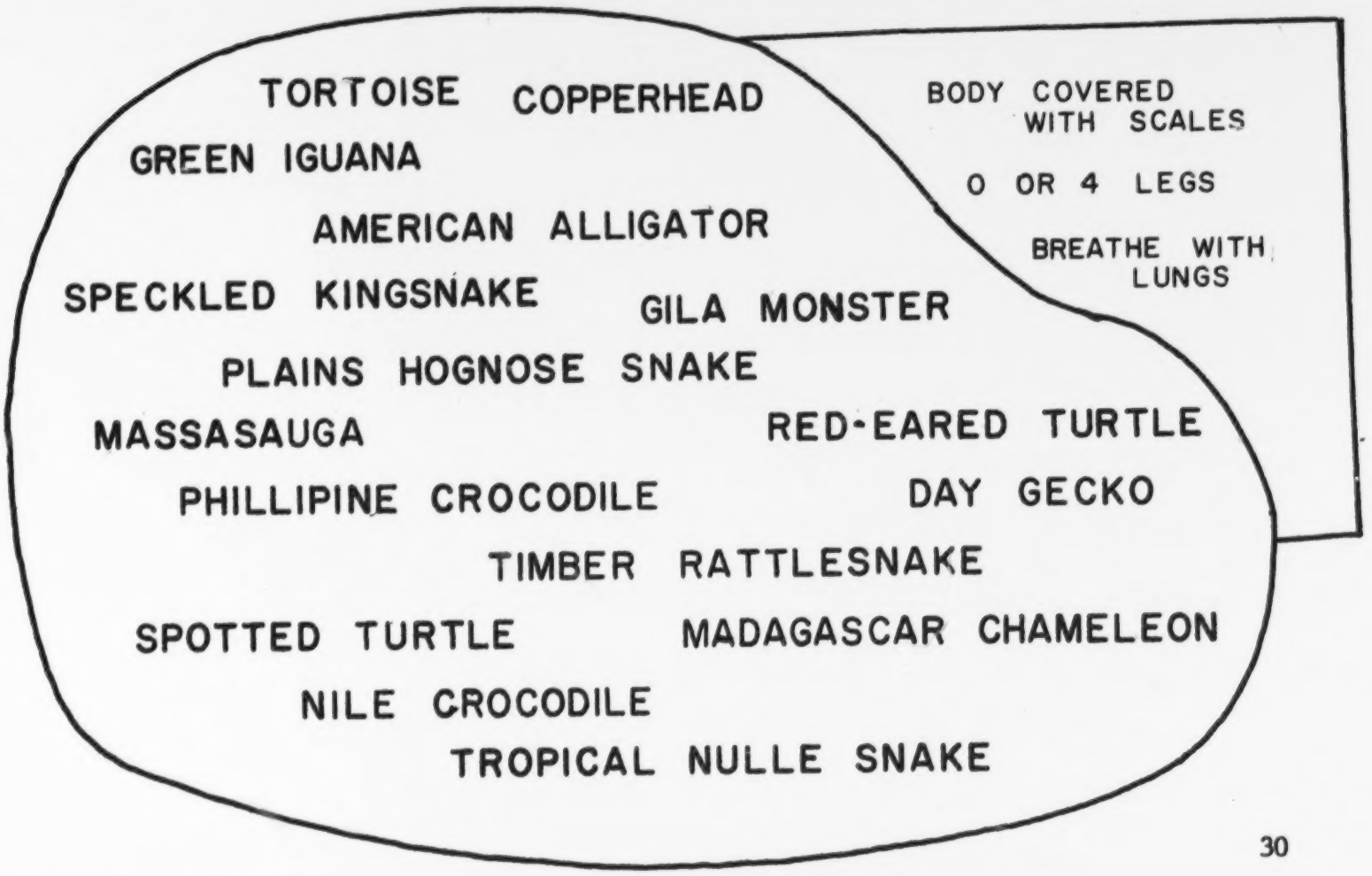
_____

_____

I think a similar species is a _____.

How are reptiles divided into smaller groups ?

Below is a list of reptiles that you will find in the Reptile House at the zoo. Find each of the reptiles and study its structure carefully. (For the American Alligator, examine the skull in the display case.) Then, on the next two pages arrange the reptiles into sub-sets and those sub-sets into still smaller sub-sets until you have the smallest divisions possible. Indicate each group of reptiles with a circle. Next to the circle write the characteristics which you used to separate the group from the other species. These will only be field notes. When you return to the classroom your teacher will give you a large sheet of paper to prepare a chart of your classification.



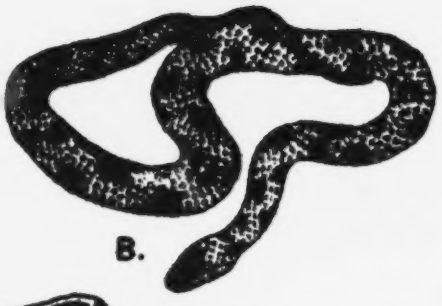
AFTER THE FIELD TRIP

This field log only has one activity for after the field trip, but this does not mean that you have to stop your study of classification or the zoo. You may have many questions that you would like answered or other areas of classification that you would like to study.

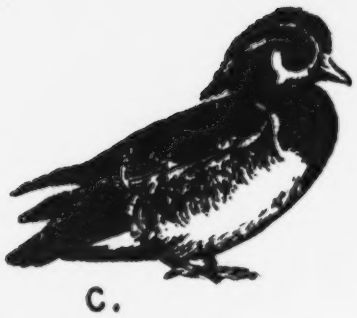
How would you arrange a zoo?

You have the rare opportunity to help in the planning of a new zoo. On the next two pages are pictures of animals that will be displayed. On page 37 you will find a map that shows the walks that have already been built. The people building the zoo would like to arrange the animals according to some system of classification. Use the map to show where you would put the animals. Draw a red line around each of your major sets. Draw a blue line around each of your sub-sets. Use yellow, green, and other colors to show even small sub-sets if you wish. Be able to explain the reasons that you used for your classification.

A.

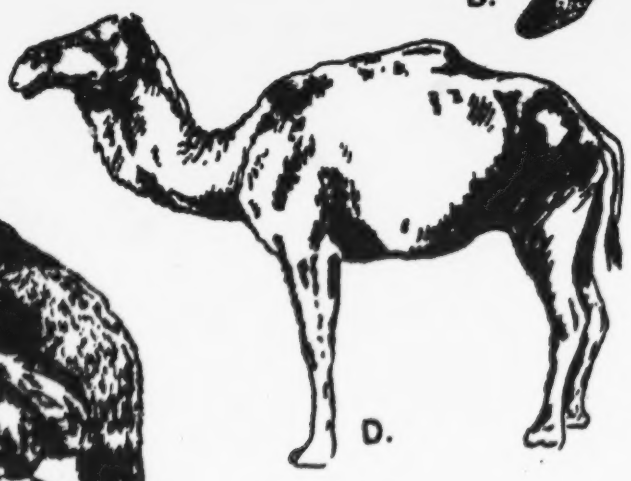


B.



C.

F.

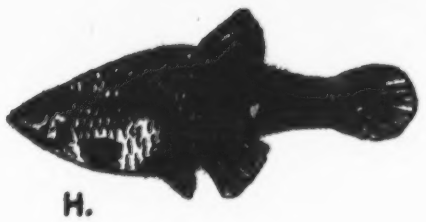


D.

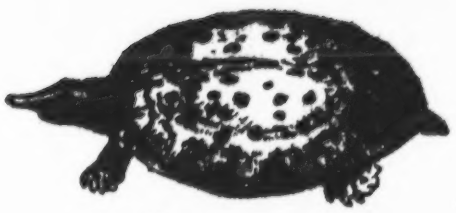
E.

G.

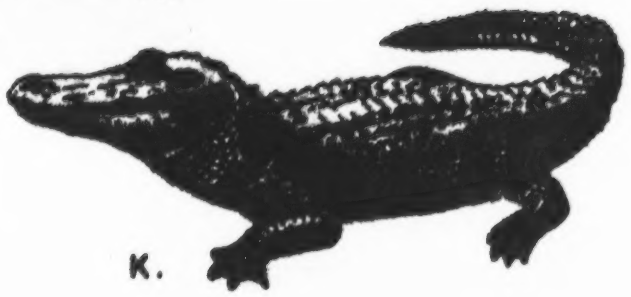
I.



H.



J.



K.

L.

M.

N.

O.

P.

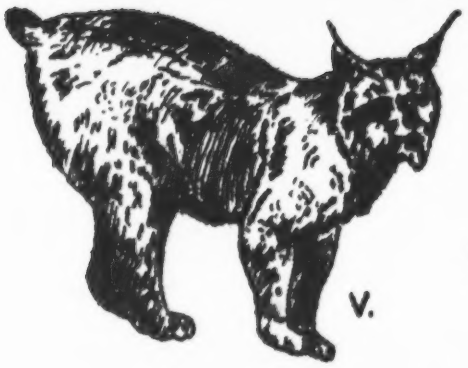
Q.

R.

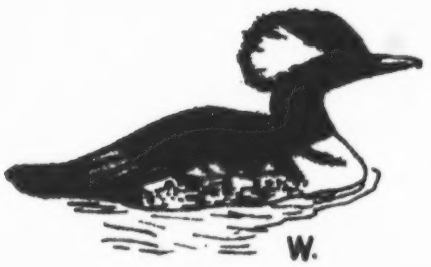
S.

T.

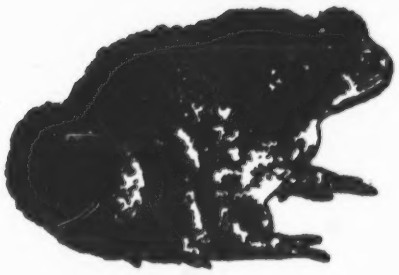
U.



V.



W.



X.

Key to Zoo Animals

A. Wolf

B. Water Snake

C. Wood Duck

D. One-humped Camel

E. Domestic Swan

F. Wooly Monkey

G. Sparrow Hawk

H. Guppy

I. Tiger Salamander

J. Soft-shelled Turtle

K. American Alligator

L. Zebra

M. Pronghorned Antelope

N. Grass Frog

O. Screech Owl

P. Mountain Lion

Q. Cockatoo

R. Chimpanzee

S. Box Turtle

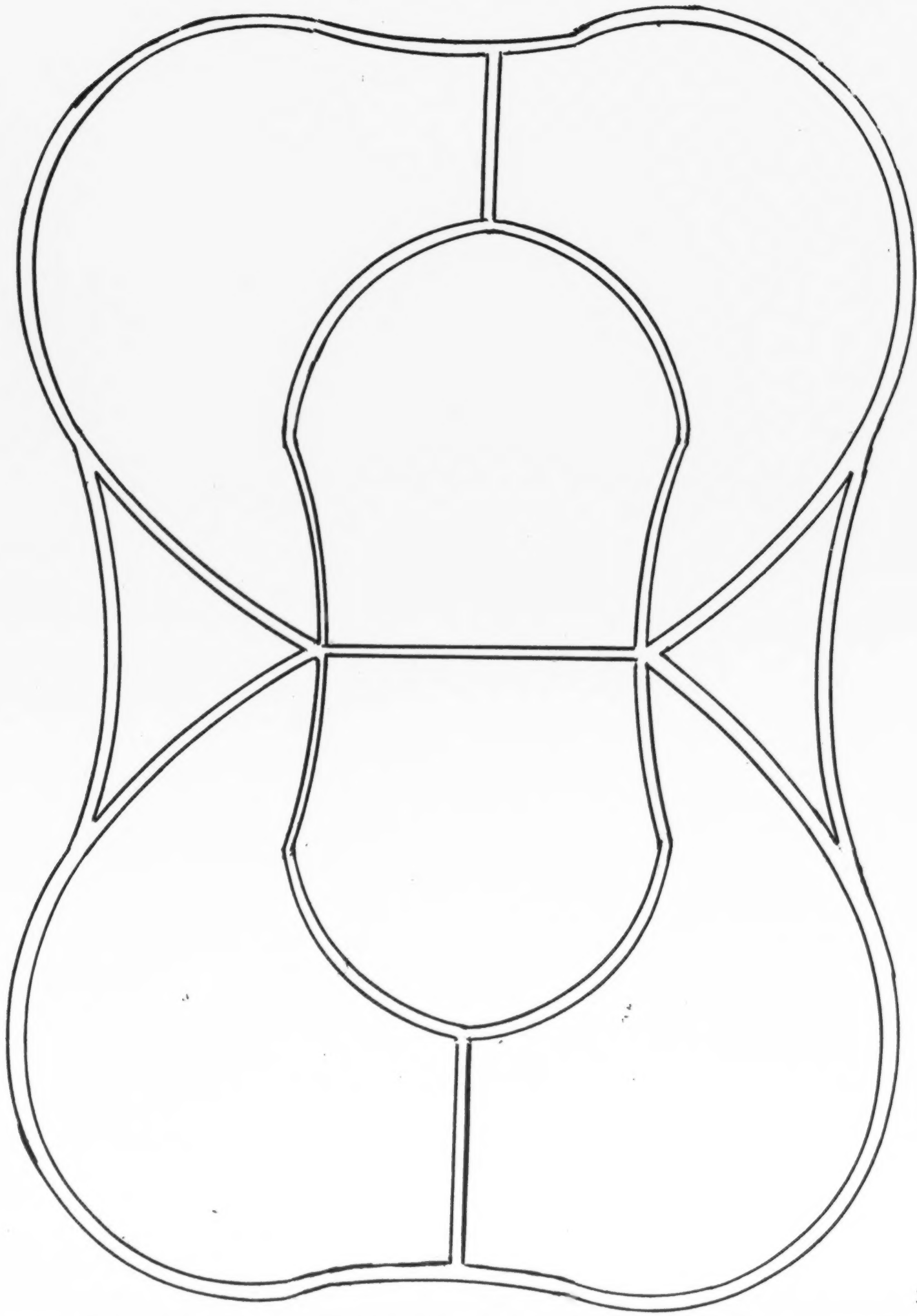
T. Fence Lizard

U. Elk

V. Canadian Lynx

W. Hooded Merganzer

X. Common Toad



What next?

In this field log you have followed the classification system only for mammals, birds, reptiles, amphibians, and fish. You may want to investigate how plants or invertebrates are classified. At the zoo, you only used one or two of the activities in this book and you saw only a small part of the zoo's animal collection. Perhaps you will want to return to the zoo several more times, either with your class, a few friends, or your family. You might take this field log with you and try to complete all the activities. You might even plan some activities of your own so that you can find answers to some of your questions.

Even if you stop at the end of this book for this year, it will be important for you to remember that you have not finished your study of classifying animals. You will find yourself studying other groups of animals in fifth or sixth grade. In life science at junior high school you will learn even more about the Animal Kingdom. High school biology studies animals again, but even when you finish then you will not be expected to know everything about animals. The animals are interesting enough that you could spend an entire lifetime studying just a small group of them and many people do just that.

Classification is a tool of science that can be used in everyday life. The more you use it the better the tool will become. Remember that you are using classification when you arrange things in your drawers in your room, use the library, go shopping, or organize your hobby. Even keeping a neat notebook in school is a form of classification. As you do other things through the year, remember classification and how important it is in your life.